WHAT IS CLAIMED IS:

1. A method for enhancing venous return to the heart, the method comprising:

delivering a positive pressure breath to a person suffering from low blood pressure or head trauma;

actively extracting respiratory gases from the person's airway following the positive pressure breath to create an intrathoracic vacuum to enhance venous return to the heart; and

repeating the steps of delivering positive pressure breaths and extracting respiratory gases.

2. A method as in claim 1, further comprising interfacing an impedance threshold valve to the person's airway, wherein the threshold valve prevents airflow to the person's lungs when attempting to inspire until the threshold valve opens, thereby augmenting blood flow back to the heart.

3. A method as in claim 2, wherein the threshold valve is configured to open when the negative intrathoracic pressure exceeds about -7 $cmH_2O$.

4. A method as in claim 1, further comprising interfacing a flow limiting valve to the patient's airway and regulating the pressure or the volume of the positive pressure breath with the flow limiting valve.

5. A method as in claim 1, further comprising interfacing a pressure source and a vacuum source to the person to deliver the positive pressure breath and to extract the respiratory gases.

6. A method as in claim 5, wherein the pressure source and the vacuum source comprise a compressible bag system.

7. A method as in claim 6, further comprising reconfiguring the compressible bag system to operate only as a pressure source.

8. A method as in claim 1, further comprising exhausting the extracted respiratory gases to the atmosphere.

9. A method as in claim 1, further comprising varying the duration of the positive pressure breaths or the extraction of the respiratory gases over time.

10. A method as in claim 1, further comprising supplying supplemental oxygen to the person.

11. A method as in claim 1, further comprising monitoring at least one physiological parameter of the person and varying the positive pressure breath or the extraction of respiratory gases based on the monitored parameter.

12. A method as in claim 11, wherein the physiological parameters are selected from a group consisting of end tidal $CO_2$, oxygen saturation, blood pressure and cardiac output.

13. A method as in claim 11, further comprising varying the amplitude of the positive pressure breath or the extraction of respiratory gases.

14. A method as in claim 6, wherein the respiratory gases are extracted upon recoiling of the compressible bag system.

15. A method as in claim 1, wherein the intrathoracic vacuum lowers the person's intrathoracic pressure to about -1mm Hg to about -20mm Hg, and wherein the intrathoracic vacuum is in the range from about -2mm Hg to about -60mm Hg.

16. A method as in claim 1, further comprising measuring the volume of the positive pressure breath.

17. A method as in claim 11, further comprising transmitting information on the measured parameter to a remote receiver.

18. A method for treating a person suffering from cardiac arrest, the method comprising:

repeatedly compressing the person's chest;

preventing or impeding respiratory gases from flowing to the person's lungs for at least some time between chest compressions;

periodically delivering a positive pressure breath to the person;

extracting respiratory gases from the person's airway following the positive pressure breath to create an intrathoracic vacuum to enhance venous return to the heart.

19. A method as in claim 18, further comprising coupling an impedance threshold valve to the person's airway to prevent or impede the flow of respiratory gases.

20. A device for manipulating intrathoracic pressures, comprising:

a compressible bag structure;

an interface member coupled to the bag structure that is configured to interface with a person's airway;

a one way forward valve coupled to the bag structure to permit respiratory gases to flow to the person's airway upon compression of the bag structure;

a one way exit valve coupled to the bag structure to permit respiratory gases to be pulled from the person's airway upon decompression of the bag structure, thereby producing a negative intrathoracic pressure.

21. A device as in claim 20, wherein the forward valve and the exit valve are selected from a group of valves consisting of a spring loaded check valve, a fish mouth valve, a ball valve, a disc valve, a baffle, a magnetic valve, and an electronic valve.

22. A device as in claim 20, wherein the bag structure is configured to produce a vacuum in the range from about -2mm Hg to about -60mm Hg to produce a negative intrathoracic pressure in the range from about -1mm Hg to about -20mm Hg.

23. A device as in claim 20, further comprising an impedance threshold valve coupled to the compressible bag structure, wherein the threshold valve is configured to permit respiratory gases to flow to the person's lungs once a certain negative intrathoracic pressure is exceeded.

24. A device as in claim 20, further comprising a flow limiting valve coupled to the compressible bag to regulate the flow of respiratory gases to the patient's lungs upon compression of the bag structure.

25. A device as in claim 20, further comprising a switch for permanently closing the exit valve.

26. A device as in claim 20, further comprising an exhaust valve coupled .to the bag structure to permit respiratory gases pulled from the person's airway to be exhausted to the atmosphere.

27. A device as in claim 20, further comprising an oxygen source to provide supplemental oxygen to the person through the interface member.

28. A device as in claim 20, further comprising at least one physiological sensor operably coupled to the compressible bag structure to measure at least one physiological parameter of the person.

29. A device as in claim 28, wherein the physiological sensor is selected from a group consisting of end tidal $CO_2$ sensors, oxygen saturation sensors, blood pressure sensors and cardiac output sensors.

30. A device as in claim 28, further comprising a transmitter coupled to the sensor to transmit information on the measured parameter to a remote receiver.

31. A device as in claim 20, further comprising a regulation valve coupled to the bag structure to regulate the rate of flow of respiratory gases to the person's airway and the pressure of the respiratory gases delivered to the person's airway.

32. A device as in claim 20, wherein the bag structure comprises a ventilation chamber that supplies respiratory gases through the forward valve upon compression of the bag structure and an expiration chamber that receives respiratory gases from the person through the exit valve upon decompression of the bag structure.

33. A device as in claim 20, wherein the bag structure further comprises a venturi system that pulls respiratory gases from the person's lungs upon decompression of the bag structure.

34. A device as in claim 20, wherein the bag structure is constructed of an elastomeric material.

35. A method for treating a person suffering from low blood pressure, the .method comprising:

preventing or impeding respiratory gases from flowing to the person's lungs for at least some time;

periodically delivering a positive pressure breath to the person;

actively extracting respiratory gases from the person's airway following the positive pressure breath to create an intrathoracic vacuum to enhance venous return to the heart.